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NAVFAC **IGS-10201 (JUNE 2003)**

Supersedes IGS-10201 (05/02)

Preparing Activity: LANTNAVFACENGCOM **Based on UFGS-10201N**

ITALIAN GUIDE SPECIFICATIONS

Use for ITALIAN projects only

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SECTION 10201

METAL [WALL] [AND] [DOOR] LOUVERS

06/03

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NOTE: This guide specification is issued by the Atlantic Division, Naval Facilities Engineering Command for regional use in Italy.

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NOTE: This guide specification covers the requirements for average metal wall louvers, metal louvers in wood doors, screens and frames, and accessories. For very large or special louvers and louvers subject to snow or seismic loads, insert additional paragraphs as required.

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NOTE: On the drawings, show:

1. Locations, sizes, and types of louvers.

2. Details of louver construction and installation, including subframes, sills, moisture collection pan and flashing.

3. Locations and arrangement of mullions.

4. Colors of factory-finished louvers, unless color is specified.

5. Aluminum louvers are supplied in Europe by mechanical equipment and accessory manufacturers. They are generally fabricated of thin cross-section aluminum (break metal) and are limited to smaller than 2 meters by 2 meters. The products may not meet the designer's expectations where "architectural louvers" are required. American companies that manufacture large aluminum "architectural" louvers in the U.S. are present in

Europe and can export them from the U.S. The designer should investigate the time and cost (shipping and duty) prior to selecting a U.S. built product.

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NOTE: Comments and suggestion on this specification are welcome and should be directed to the technical proponent of the specification. A listing of the technical proponents, including their organization designation and telephone number, is on the Internet.

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

EUROPEAN COMMITTEE FOR STANDARDIZATION (EN)

EN 288-4	(1992) Specification and Approval of Welding Procedures for Metallic Materials - Part 4: Welding Procedure Tests for the Acr Welding of Aluminum and its Alloys
EN 485-1	(1993) Aluminum and Aluminum Alloys - Sheet, Strip and Plate - Part 1: Technical Conditions for Inspection and Delivery
EN 485-2	(1994) Aluminum and Aluminum Alloys - Sheet, Strip and Plate - Part 2: Mechanical Properties
EN 485-3	(1993) Aluminum and Aluminum Alloys. Sheet, Strip and Plate. Tolerances on Shape and Dimensions for Hot-Rolled Products
EN 573-1	(1994) Aluminum and Aluminum Alloys - Chemical Composition and Form of Wrought Products - Part 1: Numerical Designation System
EN 755-4	(1996) Aluminum and Aluminum Alloys -

	Extruded Rod/Bar, Tube and Profiles, Part 4, Square Bars, Tolerances on Dimensions and Form
EN 10130	(1991) Cold Rolled Low Carbon Steel Flat Products for Cold Forming - Technical Delivery Conditions
EN 10142	(2000) Continuously Hot Dip Zinc Coated Low Carbon Steel Sheet and Strip for Cold Forming - Technical Delivery Conditions, Including Amendment 1, (1995)
EN 10143	(1993) Continuously Hot Dip Metal Coated Steel Sheet and Strip - Tolerances on Dimensions and Shape
EN 10088-1	(1995) Stainless Steels - Part 1, List of Stainless Steels
EN 10088-2	(1995) Stainless Steels - Part 2, Technical Delivery Conditions for Sheet/Plate and Strip for General Purposes

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 7599	(1983) Specifications for Anodic Oxide Coatings on Aluminum

1.2 SUBMITTALS

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NOTE:

Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item is required.

A “G” following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a “G”. Only delete an existing “G” if the submittal item is not complex and can be reviewed through the Contractor’s Quality Control system. Only add a “G” if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Recommended codes for Army projects are "RE" for Resident Engineer approval, "ED" for Engineering approval, and "AE" for Architect-Engineer approval.

Codes following the "G" typically are not used for Navy projects.
Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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Submit the following in accordance with section entitled "Submittal Procedures."

SD-02 Manufacturer's Standard Color Charts

Wall louvers

Door Louvers

Show all information necessary for fabrication and installation of louvers. Indicate materials, sizes, thicknesses, fastenings, and profiles.

SD-04 Drawings

Wall louvers; G

Door louvers; G

Colors of finishes shall closely approximate colors indicated. Where color is not indicated, submit the manufacturer's standard colors to the Contracting Officer for selection.

1.3 DELIVERY, STORAGE, AND PROTECTION

Deliver materials to the site in an undamaged condition. Carefully store materials off the ground to provide proper ventilation, drainage, and protection against dampness. Louvers shall be free from nicks, scratches, and blemishes. Replace defective or damaged materials with new.

1.4 PERFORMANCE REQUIREMENTS

1.4.1 Blast Resistance Criteria

Design and fabricate all exterior wall louvers to withstand a blast pressure of 62 kPa (peak reflected) or an impulse of 448 kPa/sq. m.

a. Direction of initial blast force perpendicular to louver.

b. Louver assemblies may be damaged beyond repair but shall not collapse and shall remain in the wall.

c. Louver frames and anchoring shall hold assemblies in place through a 2 degree rotation.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Galvanized Steel Sheet

EN 10142, EN 10143 coating designation.

2.1.2 Aluminum Sheet

EN 485-1, EN 485-2 , EN 485-3, alloy 3003 or 5005 with temper as required for forming.

2.1.3 Extruded Aluminum

EN 288-4, EN 755-4, EN 573-1, alloy 6063-T5 or -T52.

2.1.4 Stainless Steel

EN 10088-1, EN 10088-2, Grade B.5, with brushed finish.]

2.1.5 [Cold Rolled Steel Sheet

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NOTE: Delete the following paragraph if the project does not have interior wall louver.

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EN 10130, with matte finish. Use only on wall louvers not exposed to the environment.]

2.2 METAL WALL LOUVERS

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NOTE: Louver free areas vary from 25 to 65 percent, depending on blade design. When a certain free area is required, indicate blade type as well as louver size. CAUTION: Even "weather-resistant" louvers will allow water penetration. Quantity and velocity specified are for wall louvers in mechanical rooms and similar locations. Where water penetration would be a problem, specify acceptable quantity of water penetration at air velocity required, or provide operable louvers or operable dampers to exclude wind-driven rain.

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Weather resistant type, with bird screens made to withstand a wind load of not less than 1.44 kPa. Water penetration shall not exceed 0.05 grans/0.093 sq. meters of free area at a velocity of 152 m/minute when treated for 15 minutes. Louvers shall maintain [65%] [____] minimum free area. Premanufactured louver [with louver blades set at minimum angle of [45] [____] degrees and] utilize [vertical water stops in the

"Z" blade shape] [drainable louver blades and side mullions].

2.2.1 Extruded Aluminum Louvers

Fabricated of extruded 6063-T5 or -T52 aluminum with a wall thickness of not less than 2 mm.

2.2.2 Formed Metal Louvers

Formed of [zinc-coated] [stainless] steel sheet not thinner than 16 U.S. gage, or aluminum sheet not less than 2 mmthick.

2.2.3 Mullions and Mullion Covers

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NOTE: Large louvers may require bracing for given wind loads and with a maximum deflection of L/180.

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Same material and finish as louvers. Provide mullions [where indicated] [for all louvers more than 1500 mmin width at not more than 1500 mmon centers]. Provide mullions covers on both faces of joints between louvers.

2.2.4 Sub-Frames

Provide all louvers with sub-frames at all openings. Fabricate louver section to be removable from openings with only sub-frames left in place. Design fasteners for interior access only.

2.2.6 Blank-Off Panels

1.6 millimeters thick sheet aluminum with black painted finish on outer (exposed to view) surfaces.

2.2.7 Rain Water Moisture Collection Pan

Provide moisture collection pan on he interior sides of all louvers that are not ducted directly to a ventilation system. The collection pan shall be 40 mm wide with turned up edges to contain this moisture that penetrates through the louver and slope back to the exterior wall for drainage to the exterior of the building. Provide pan of same material as louver.

2.2.8 Screens and Frames

[Aluminum louvers, provide 12.5 mmsquare mesh, 1.8 or 1.5 mmaluminum or 6 mm square mesh, 1.5 mmaluminum bird screening.] [Steel louvers, provide 12.5 mmsquare mesh, 2.5 or 1.5 mm gage zinc-coated steel; 12.5 mmsquare mesh, 1.5 mmcopper; or 6 mmsquare mesh, 1.5 mm thick gage zinc-coated steel or copper bird screening.] Mount screens in removable, rewirable frames of same material and finish as the louvers.

2.3 [2.3 DOOR LOUVERS

[Inverted "Y"] [or] [Inverted "V"] sightproof type not less than 25 mmthick

with matching metal trim. Louvers for exterior doors shall be weather resistant type.

2.3.1 Extruded Aluminum Door Louvers

Fabricate of 6063-T5 or -T52 aluminum alloy with a wall thickness of not less than 1.25 mmthick. Frames and trim shall be clamp-in "L" type.

2.3.2 Formed Metal Door Louvers

Fabricate of [0.9 mm thicksteel sheet] [or] [sheet aluminum not less than 1.25 mmthick]. Trim shall be beveled "Z" molding both sides.

2.3.3 Screens and Frames

For exterior doors, provide aluminum insect screens, 18 by 16 or 18 by 14 mesh. Mount screens in removable, rewirable frames of same material and finish as the louvers.

]2.4 FASTENERS AND ACCESSORIES

Provide stainless steel screws and fasteners for aluminum louvers and zinc-coated or stainless steel screws and fasteners for steel louvers. Provide other accessories as required for complete and proper installation.

2.5 FINISHES

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NOTE: Anodizing quality is available in four grades: Architectural, decorative, bright anodizing and general engineering quality. The thickness of the anodic coating is measured in micrometers in the following classes: AA 5, AA 10, AA 15, AA 20 and AA 25, with the numbers indicating the minimum average thickness in micrometers. Consult manufacturers product literature for product availability prior to selecting a thickness. Specify AA 20 where doors will be subject to excessive wear, highly corrosive industrial atmospheres, where dusts, salts, and other destructive elements that attack metal are in existence. Specify AA 10 or AA 15 where lighter use is anticipated.

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2.5.1 Aluminum

Provide factory-applied [anodic coating] [or] [organic coating].

2.5.1.1 Anodic Coating

Clean exposed aluminum surfaces and provide an anodized finish conforming to ISO 7599. Provide the following finish:

a. Quality: [Architectural] [_____].

b. Thickness: [AA 10] [AA 15] [AA 20].

c. Color: [medium bronze] [dark bronze] [black] [as indicated] [clear].

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NOTE: Select either anodized or organic coating. AA20 anodized and high performance organic coating are the highest quality and cost. Baked enamel is the least coat alternative.
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2.5.1.2 Organic Coating

Clean and prime exposed aluminum surfaces. Provide [a baked enamel (50% polyvinylidene fluoride or 50% silicon polyester) finish with total dry film thickness not less than 0.02 mm] [a high-performance (70% polyvinylidene fluoride) finish with total dry film thickness of not less than 0.03 mm]. The finish color shall be [_____] [as indicated].

Manufacturers of high performance coatings which generally comply with these specifications are:

Ausimont S.p.A
Via San Pietro 50
20021 Bollante
Milano, Italia
Tel: 39-2-6270-2137
Fax: 39-2-6270-2109

PPG Industries France SA
1, Avenue President Wilson
92800 Puteaux, France
Tel: 33-146,988 000
Fax: 33-146,988 260

2.5.2 Steel

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NOTE: Coordinate this finish with other exterior building components. If a more durable finish is used on the building exterior or needed for weather resistance, edit the finish coat to describe the paint system.
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Provide factory-applied coating. Clean and phosphate treat exposed surfaces and apply rust-inhibitive primer and baked enamel finish coat, 0.025 mm minimum total dry film thickness, color [_____].

2.6 AVAILABLE PRODUCTS

Products generally meeting the requirements of this specification are

manufactured by the following:

TROX Italiana, S.p.A.
via Piemonte, 23 B/C
20098 S. Giuliano Milanese
Tel: 06/670-5812
Fax: 06/670-4730

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Wall Louvers

Install using stops or moldings, flanges, strap anchors, or jamb fasteners as appropriate for the wall construction and in accordance with manufacturer's recommendations.

[3.1.2 Door Louvers

Install louvers in wood doors by using metal "Z" or "L" moldings. Fasten moldings to door with screws.

]3.1.3 Screens and Frames

Attach frames to louvers with screws or bolts.

3.2 PROTECTION FROM CONTACT OF DISSIMILAR MATERIALS

3.2.1 Copper or Copper-Bearing Alloys

Paint copper or copper-bearing alloys in contact with dissimilar metal with heavy-bodied bituminous paint or separate with inert membrane.

3.2.2 Aluminum

Where aluminum contacts metal other than zinc, paint the dissimilar metal with a primer and two coats of aluminum paint.

3.2.3 Metal

Paint metal in contact with mortar, concrete, or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.

3.2.4 Wood

Paint wood or other absorptive materials that may become repeatedly wet and in contact with metal with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.

3.3 CLEANING

Clean interior and exterior surfaces of louvers of mortar, plaster, paint

spattering spots, and other foreign matter to present a neat appearance. Replace all stained, discolored, or abraded louvers that cannot be restored to their original condition with new louvers.

-- End of Section --